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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/662,684 | 09/15/2003 | Yong Kyun Cho | P-9894.02 | 9786 |

7590

12/03/2004

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| EXAMINER |
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NATNITHADHA, NAVIN

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| ART UNIT | PAPER NUMBER |
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3736

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,684

Applicant(s)

CHO ET AL.

Examiner

Navin Natnithithadha

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Claims 1-12 are cancelled.
2. Claims 13-36 are presented.

Claim Objections

3. Claims 35 and 36 are objected to because of the following informalities:

Both claims are mistakenly dependent on claim 36. It appears that claim 35 should be dependent on claim 29 and claim 36 should be dependent on claim 35.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 13, 15-22, and 24-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Turcott, US 6,409,675 B1.

In regards to claims 13, 22, 29, and 35, Turcott teaches an implantable medical device (see abstract and fig. 1), comprising: sensor(s) 10 (a through n); a memory 18; an electronic circuit (processor) 12; and a transmitter/receiver (telemetry device) 16 for communicating data to an external unit 116 (see col. 13, lines 53-65). Turcott teaches the processor monitors the respiratory pattern during sleep (see col. 11, lines 53-60) and detects Cheyne-Stokes respiratory patterns by identifying the frequency component with the greatest amplitude lying between the frequency range of 0.005 and 0.02 Hz associated with Cheyne-Stokes respiration (see col. 19, line 55 to col. 20, line 14, and col. 21, lines 18-26).

As to claim 15, Turcott teaches fetching data from (interrogation of) the memory (see col. 21, line 13) and acquiring and processing data at scheduled intervals (see col. 14, lines 26-38).

As to claims 16-21, 24-28, and 30-34, Turcott teaches a "variety" of physiological sensors that are used to detect Cheyne-Stokes respiration which including: vascular plethysmography sensor (intracardiac impedance sensor; an arterial hemoglobin saturation sensor; a heart and lung sound sensor, which includes a microphone, accelerometer (movement sensor), or pressure transducer (pressure sensor); a thoracic impedance plethysmography (intrathoracic impedance sensor) sensor; and an electrocardiogram sensor (see col. 10, lines 9-11, col. 21, lines 29-32, and see claim 11).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14, 23, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turcott, US 6,409,675 B1 as applied to claims 13, 22, and 35 above, and further in view of Erickson et al, US 5,485,581 A.

In regards to claims 14, 23, and 36, Turcott does not teach extracting or detecting arousal information corresponding to sleep respiratory events from the data. However, detecting arousal information is well known in the art for sleep apnea monitoring devices. For example, Erickson teaches an implantable medical device, comprising a processor for analyzing a respiratory waveform and detecting arousal information (see col. 2, lines 41-58 and col. 13, lines 20-25). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Turcott's device in order to accurately assess sleep apnea events.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navin Natnithithadha whose telephone number is (571) 272-4732. The examiner can normally be reached on Monday-Friday, 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone


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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Navin Natnithithadha
Patent Examiner
GAU 3736
November 24, 2004



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SUPERVISORY PATENT EXAMINER
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